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Mourning dove brooding

THE WILSON BULLETIN

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SHORT NOTES ON THE LIFE HISTORIES OF VARIOUS SPECIES OF BIRDS

BY IRA N. GABRIELSON

A few notes on the Migrant Shrike, intended to appear with this paper, were in some way separated and published in the Wilson Bulletin, Vol. 33, page 67.

During a number of years of studying the life history of birds, particularly that part correlated with the breeding season, a quantity of short notes and uncompleted studies of nest life have accumulated. It is proposed to publish them under the above title. Our knowledge of the intimate life history of even the commonest species of birds is far from complete and it is hoped that these fragmentary notes may encourage others to make complete studies of these and other species of birds.

KILLDEER (*Oxyechus vociferus vociferus*)

Although the Killdeer is perhaps the most common shore-bird in the United States little has been published concerning its behavior. I have a few notes on courtship and nesting that were made in northwestern Iowa.

The behavior during courtship was witnessed on several occasions. On April 6, 1910, I came upon a pair going through this performance. The male had taken his station some distance from the female and at intervals whirled rapidly about uttering a curious stuttering note as he did so. Every few seconds the female advanced a few steps toward the male but when he stopped to observe the effect of his display she quickly turned her back and appeared perfectly indifferent. This was repeated several times until the female suddenly flew away.

In this region the favorite nesting place was at the base of a hill of corn. As a usual thing little or no attempt was made to build a nest — a few pebbles and bits of corn husks being the usual type. This material is seldom concentrated into a nest but is scattered over an area of one or more square feet, the eggs being deposited on the ground at some point within this area. In many instances the parents show little concern for the nest,

contenting themselves with giving the alarm note once or twice as they fly away.

On June 14, 1910, a rather unusual nest was found. It was placed in a small depression and carefully lined with shredded corn husks. It was situated near a hill of corn and contained at the time of discovery, 3:00 o'clock p. m., three eggs. On passing the nest at 7:00 p. m. of the same day I was rather surprised to see that the fourth egg had been laid in the intervening time. Twenty-five days later (July 9) at 8:00 a. m. one egg had hatched and by 1:30 p. m. all the young were out and the shells gone from the nest.

Movable blind used in studying birds' nests

It was impossible to approach the nest on foot without alarming one or the other of the birds, as one was always on guard some distance away. At the appearance of a person walking the one on guard would fly in a circle about the nest giving the alarm, at the first note of which the one on the nest ran rapidly until some distance away and then took wing to join its mate in circling about the intruder. A man plowing corn was viewed

with absolute indifference by both birds, the team often passing down the row next to the nest without disturbing the sitting bird. At an alarm, however, both birds flew about the field unless the intruder persisted in approaching the nest. In such a case one of the birds dropped to the ground near the person, invariably on the side away from the nest, and fluttered about apparently in the greatest distress. The attitude most frequently assumed was as follows: one wing was held extended over the back, the other beat wildly about in the dust, the tail feathers were spread and the bird lay flat on the ground constantly giving a wild alarm note. This performance continued until the observer came very near when the bird would rise and run along the ground in a normal manner or at most with one wing dragging slightly as long as pursuit was continued. If the observer turned back toward the nest, however, these actions were immediately repeated. When the parents had succeeded in luring the intruders about one hundred yards they seemed to be satisfied as they then flew away. However, the above actions could be witnessed indefinitely by returning to the nest after being led away.

The young were very active and exceedingly adept at hiding almost as soon as they were out of the shell. Their mottled coloring rendered them almost invisible when they squatted in the rough ground of the cornfield. They remained in the vicinity of the nest until July 16, after which the parents led them to the shores of a near-by pond.

The Feeding of Nestling Mourning Doves
(*Zenaidura macroura carolinensis*)

During the spring and summer of 1915 the writer, while engaged in studying the habits and behavior of nestling birds, erected blinds at several nests of the Mourning Dove in an effort to learn something of the feeding activities. With one exception these attempts were largely failures. In central Iowa, where this work was undertaken, nearly every farm yard had its quota of these birds nesting in the groves and consequently no difficulty was experienced in finding nests to observe.

Although the first blind was erected on June 2, and such time as could be spared from other duties spent in watching this nest, no results were secured. A second nest was tried with similar results, but better fortune attended the third attempt.

At all three nests the general behavior was much the same. During the time they were under observation one or the other of the parents brooded almost constantly while the one off duty was generally to be found sitting within a few yards of the nest except when feeding. The parent usually left the nest as any one entered the blind and often remained away for a half hour or more. On returning the bird usually alighted some distance from the nest and slowly approached with mincing steps often taking five minutes or more to reach the nest.

At one nest one bird sat on the nest while the other occupied a branch directly over it. Both of these birds were very nervous and at the least movement or noise from within the blind both fluttered to the ground and went through the familiar performance used by many birds to draw intruders away from their nest or young.

At the third nest the birds were much less suspicious, and after spending some time for three different days the method of feeding was observed. On July 4 the nest was watched for five hours. The only action that occurred during that time was the relieving of the brooding bird after the first three hours.

On July 6, when the blind was entered at 5:30 a. m., the adult left the nest and did not return until 7:15 a. m., when it came into the nest tree and very deliberately began to walk toward the nest. Ten minutes were taken in covering a distance of as many feet. This bird had a peculiar habit of settling on the nest which may or may not be the usual thing among mourning doves. When within two or three feet of the nest the parent began to ruffle the feathers and roll the body from side to side, continuing this performance until the nest was reached. Two or three more rolling movements to settle comfortably on the nest followed, after which the bird became motionless save for an occasional slow turning of the head. Life at a mourning dove nest became exceedingly monotonous for the observer, but settling down for a long wait I determined to stay all day if necessary to see the feeding operation. Fortunately this was not necessary as at 7:30 a. m. a squab backed toward the blind and getting from beneath the parent raised its head and mutely begged for food. The adult (presumably the female) responded immediately by opening her beak and allowing the nestling to thrust its beak into one corner of her mouth. She then shut her beak on that of the nestling and after remaining motionless for a short time began a slow pumping motion of the head. The muscles of her throat could be seen to twitch violently at intervals, con-

tinuing about a minute, when the nestling withdrew its beak. The other nestling then inserted its beak and the process was repeated, 15 seconds elapsing before its beak was removed. With intervals varying from 5 to 10 seconds (watch in hand) four such feedings, two to each nestling, occurred. The nestling not being fed was continually trying to insert its beak in that of the parent and at the fifth feeding both succeeding in accomplishing this at the same time. The nestlings' beaks were inserted from opposite sides of the parent's mouth and remained in place during the feeding operation although I could not say whether or not both received food. While being fed the nestlings frequently jerked the head from side to side and also followed the motion of the parent's beak by raising and lowering themselves by the use of the legs. They were not more than five days old but had better use of their muscles than the young of passerine birds at from eight to ten days of age. The entire process described above occupied about six minutes, after which the nestlings crawled back beneath the parent.

Shortly after making these observations an interesting article on the rock dove which appeared in the Auk * attracted my attention. In this article the account of the feeding process is as follows: "The feeding of the young with the so-called 'pigeon milk' by both parents is an interesting phenomenon. The adult thrusts its bill deep down into the sides of the bill of the squab, vibrates its wings and works its neck muscles in a pumping manner. The squab, when not actually engaged in the feeding process, waves its wings and calls in beseeching, whistling notes for more."

Apparently here were two radically different methods of feeding practiced by two closely related species, but this discrepancy may be explained by the following quotation from Tegetmeier.† "To receive nourishment the young thrusts its beak into the side of the mouth of the old bird, in such a position that the soft food which is disgorged from the crop of the parent, with a sort of convulsive shudder, is received into the lower mandible or jaw which is widely expanded to receive it. It is singular that so simple an action as this should have been so greatly misrepresented as it has been by many writers. Even so

* Townsend, Chas. W., M.D. Notes on the Rock Dove (*Columba domestica*), Auk, Vol. XXXII, July, 1915.

†Tegetmeier, W. B. F. Z. S. Pigeons; their structure, varieties, habits and management. London, 1868.

good an observer as Yarrell described in his 'British Birds' the old pigeons as feeding the young by placing their beaks in the mouths of the little ones, and overlooked altogether the beautiful adaptation of the broad spoon shaped lower jaw to the habits of the animals."

It is evident that there are errors of observation present or that the doves have two different methods of feeding the squabs, possibly at different periods of the nest life. My own experiences with the Mourning Dove lead me to believe that Tegetmeier's account is correct. However, I call attention to it here with the hope that some one who has the opportunity will get at the facts of the case.

Downy Woodpecker (*Dryobates pubescens medianus*)

Although I made many efforts to find a woodpecker's nest so situated as to permit close-range study, some condition necessary to success was always lacking.

The nearest approach to achievement was with a pair of downy woodpeckers. However, the factor here working against success was that the young left the nest before the study was fairly under way.

This nest was located about fourteen feet from the ground in an old gnarled boxelder tree. It contained at the time of discovery, June 2, 1915, four well-developed young. As soon as the nest was located a blind was erected and observations were started and carried on for an hour. On June 3 the study was continued but after two hours, when an attempt was made to move the blind closer, the young left the nest. During the three hours the nest was under observation the four young were fed 48 times, 21 by the female bird and 27 by the male. The young were very noisy and during the absence of the parent kept thrusting their heads out of the nest opening, screeching all the time. As one of the parents approached within sight the noise redoubled until one was fed.

Little was learned regarding the nature of the food. The distance of fifty feet was too great even with glasses to identify the food carried in the beak although it was practically always visible. Twice the male, foraging on a nearby tree trunk, was seen to catch spiders and on four different occasions a shiny brown larva was seen protruding from the beak of a parent bird as he scrambled along a branch of an oak within ten feet of the blind.

Both parents had stereotyped routes of approaching the nest and rarely deviated from them. This was to be expected as they had been feeding the young at the time these observations were made, practically the normal time for the nestlings to remain in the nest, and they therefore had opportunity to establish regular habits.

Attempts were made to study nests of red-headed woodpeckers and flickers but because of unfavorable location little result was secured. A flicker's nest situated near enough to the ground to make blind work feasible was found. The nest, however, was beside a street in the city limits and interruptions were so frequent that the work was given up. By watching an hour one morning from across the street we found that the female remained on the nest almost constantly. During the hour the male came, entered the nest with the female five times, remaining from three to five minutes at each visit. He was evidently feeding by regurgitation as no food was ever visable in the beak. After the young birds left the nest the pair were frequently noted feeding the young by a regurgitative process. This continued for at least two days.

The parent usually alighted upon the tree above the fledgling to be fed and the "pumping" was a comparatively easy process although always accompanied by considerable muscular effort. Once the male alighted below a youngster hanging nearly head down on a small tree trunk and the contortions resulting from the attempt were amusing to an onlooker though doubtless a very serious matter to the actors. Whether the youngster received any food or not I cannot say.

Wood Pewee (*Myiochanes virens virens.*)

During the spring and summer of 1915, while engaged in securing photographs of birds and nests for nature work in the schools, I was able to make a few notes on some of the birds while waiting for suitable poses and views.

Among the most interesting of these birds was a wood pewee, whose nest, discovered on June 30, contained three eggs. It was saddled on a long straight limb of an elm perhaps fifteen feet from the ground and about the same distance from the trunk of the tree. The only foliage on this branch was a spreading spray of leaves several feet beyond the nest. One would think that a nest so located would be easily discovered but such was not the case. While conspicuously located it was cunningly

woven onto the branch and so thoroughly covered with lichens that I could scarcely believe it was a nest even after seeing the bird alight upon it. From below it looked to be simply a lichen-covered knot or a small fungous growth upon the limb and only after we were on a level with it did it seem at all conspicuous.

On returning to this piece of woodland, July 13, this nest was found to contain two newly hatched young. At this time the limb was sawed off and lowered to within three feet of the

Wood Pewee brooding newly hatched young

ground and firmly fastened to strong stakes. When we returned several hours later we found one of the parents brooding contentedly on the nest. We were regarded with absolute indifference as we approached to within six feet to take a photograph. Altogether four hours were spent in the blind erected at this nest and seven feedings were recorded at this time. The weather was hot and the nestlings newly hatched, consequently, brooding and shade were of more importance at this stage of the nestling period than later when the growing birds need relatively great quantities of food. The minute insects brought could not be identified.

The blind was entered at 7:45 the next morning and immediate preparations for taking photos were made. The brooding bird

was not disturbed by my entrance into the blind but as the camera lens appeared in the opening of the blind she left the nest and dashed repeatedly at the lens, snapping her mandibles vigorously. This continued for several minutes before she finally returned to the nest. At intervals during the morning she renewed her attack on the lens but aside from this paid no attention to either the blind or my movements.

The female brooded regularly throughout the morning, usually staying from twenty to thirty minutes between trips for food. In the early morning hours while the nest was shaded the brooding bird sat closely on the nest. As the sun struck the nest during the heat of the day the parent stood in the nest with partially extended wings and open mouth.

Several times the brooding bird left the nest to dash out after a passing insect, sometimes succeeding and sometimes failing in capturing it. On every occasion of feeding the nestlings, the legs and antennae of small insects, largely dipterous, were visible in the beak of the parent bird.

Both birds were quiet about the nest and apparently absolutely unafraid of either the blind or a person. Several times in watching various species of birds I have noticed the same absolute lack of fear in individuals and it has always been correlated with the same period of the nest life, namely, the first twenty-four to forty-eight hours after hatching. It seems that at this time the brooding instinct reaches the stage of highest intensity during the nestling period and almost, if not quite, completely inhibits the instinct of fear. The following species of birds, which in my experience are usually among the most timid and retiring, have exhibited this same behavior: King Rail, Least Bittern and Pied-billed Grebe. The bittern and the rail allowed me to touch them and pecked at my fingers like an angry hen. Such birds as the chickadee, robin, bluebird, and others more familiar with human beings also have frequently allowed unusual liberties to be taken with them at this period.

Bronzed Grackle (*Quiscalus quiscula aeneus*)

Although one of the most common birds in Marshall County the Bronzed Grackle was by no means the least interesting. Every coniferous grove for miles around Marshalltown contained its breeding colony of grackles.

A nest in one of these colonies located close to town was chosen for the work of securing photos of the feeding activities

of the grackles. The nesting grove consisted of spruce, white pine, cedar, apple, and plum trees with a hedge of mulberries on the north. It contained approximately thirty nests, sixteen of which were occupied on May 30, the date on which the work was started.

Attention was first attracted particularly to this colony by the curious and unusual feeding habits of the birds. Instead of foraging closely about the orchard, barn yard, and near-by fields,

Bronzed Grackle male feeding young

as is the common habit of the species in this locality, a steady flight of birds was noted leaving the colony and an equal number were noted returning in another flyway loaded with food for the nestlings.

On investigating the reason for this, a very interesting state of affairs was discovered. The nesting grove under consideration was located on a slight knoll facing the northeast about three quarters of a mile from the Iowa River. At this time, however, the river was out of its banks with flood water and had spread out over the lowlands to within a quarter of a mile of the grove. At the point towards which the Grackle flight was directed was located a blue-grass pasture nearly level but con-

taining numerous little elevations of a few inches above the remainder of the land. The water was just deep enough to cover the grass on the lower parts but to leave the tops of the vegetation on these slight elevations still above water. This condition obtained over a strip of approximately a rod out into the pasture. This high water had caused a great migration of cutworms, earthworms, crickets, spiders, tumble bugs, ground beetles, and other insects into the short grass on these little knolls. From one of these little points containing slightly less than one square foot I secured thirteen earthworms.

It was in this territory that the Grackles were feeding. Not only Grackles but Robins, Meadowlarks, Cowbirds, and Green Herons were busily feeding on these refugees. It was rather surprising to me to see such birds working in the shallow water but the flood had provided a bountiful harvest and the birds were making the most of it. A strong wind was blowing from the northeast and both grackles and robins feeding from the grove flew close to the ground on the outbound trip while on the return they rose high in the air and came sailing in with the wind. The two movements were practically continuous and gave the birds the appearance of flying in a giant elipse.

To obtain some idea of the number of trips made by the parents, attempts were made to count the birds returning laden with food. During one hour, from ten to eleven in the morning, 53 Grackles entered the eastern half of the grove. From 12:15 to 1:15 p. m. two observers, each watching half the side of the grove facing the river, counted a total of 217 birds returning from this feeding ground carrying food to the young. This is an average of over three to a minute and as there were sixteen nests with young, or a total of 32 parents feeding, each parent must have made about six trips per hour.

All the nests in this colony were of similar construction. If in conifers they were among the short branches near the tops, while in the plums they were built wherever a suitable fork was found. The nest consisted of a foundation of small sticks, a body of corn husks and morning glory stems and a lining of fine grass, root fibers, wool, and feathers.

A blind was placed in position at a nest seven feet from the ground in a plum tree on May 30 at 11:00 a. m. At 1:00 p. m. I entered the blind and found the parents somewhat nervous so only remained about two hours. Only the female summoned up

courage to feed during that time and she fed both nestlings each trip but the last. Eleven minutes after entering the blind the female appeared carrying two earthworms and two or more unrecognized insects. After hopping nervously about from limb to limb above the nest she hurriedly fed both nestlings and left. At the sixth feeding she carried seven cutworms in her beak and fed them one at a time to the two nestlings. On the last feeding she came three times and thrust her bill into the nestling's mouth apparently without feeding. On the fourth return she fed one nestling, and the fifth time returned and gave the remainder of the food to the same one.

On May 31 I watched this nest from ten o'clock until three, during which time the young were fed 26 times, the male feeding nine and the female seventeen times. On two occasions the parents arrived at the nest simultaneously to feed.

During the thirty-three feedings observed in the seven hours' watching, 12 earthworms, 9 crickets, 60 cutworms, 2 spiders, 2 kernels of corn, and 7 or more unknown insects were fed to the nestlings. It is understood, of course, that there may have been other material fed, but that these numbers were actually counted. The term "cutworm" is rather broad, but the word is here used to cover the dull greasy-looking caterpillars usually known to the farmer as cutworms. The grackle's habit of carrying worms crosswise of the beak made it comparatively easy to count them at this nest.

When we returned here on the morning of June 1 we found the nest destroyed and our blind torn down, evidently the work of boys, from footprints about the place.

During the second day at the nest both birds became very tame and unsuspicious and the male frequently indulged in a curious half song accompanied by an odd acrobatic performance. I have frequently seen this performance at a distance and can not suppose that it is anything new, but at a distance of two feet it impressed me as most ludicrous. The following excerpt from my notebook for that date is evidence of the impression it made at the time: "The song is brought out by jerking open the wings and tail and jerking the body upwards as if trying to fly when stuck fast. The resulting hump much resembled, I imagine, the one given by Mark Twain's famous frog in his historic buck shot laden performance."

YELLOW WARBLER (*Dendroica aestiva aestiva*)

During the spring of 1915, while attempting to secure photographs of birds for school work I had my blind at two yellow warbler nests without succeeding in getting any very good negatives. The color of the birds seemed to be the great drawback to securing good results, as in most negatives they appeared practically indistinguishable from the dark green background of the leaves. I did, however, succeed in securing a few notes on their behavior at the nest.

Nest No. 1 was discovered on June 13 and contained at this time four eggs. The nest was located in one of a row of gooseberry bushes and was approximately two feet from the ground. June 20 the eggs were hatching and on June 21 the blind was erected, observations starting at 9:00 a. m. on the morning of June 22. This nest was watched for two hours on June 22 and one hour on June 24. When I returned to the blind on June 28 the young had disappeared. During these three hours the male fed the young ten times, the female came fourteen times, and four times while I was busy with the camera I failed to note the sex of the parent or material fed. Both parents were nervous, active little folks and except for their fortunate habit of carrying things in the tip of the bill I would have been at a loss to learn anything of the material fed. When feeding the small green larva, so common at this season of the year, they carried many of them by one end, the other end dangling loose. Apparently nothing else was carried at these times as I could see through the parted mandibles behind the larva. On one visit the male came with seven of these larvæ hanging from his beak. He tried to ram them all down the throat of one nestling at one time but failed in this and had to give them in three instalments. Usually the larvae were picked from the bushes in the immediate vicinity of the nest and brought in one or two at a trip. Forty-six recognized objects were fed in 28 visits, including 30 green larva, 3 winged insects, 2 spiders, and 11 or more small, much crushed objects which I could not recognize at all.

Several times the male gave the worms he brought to the female who in turn fed them to a nestling. The male was much the more timid of the two in this pair of birds. He made seven attempts to approach the nest on his first visit on the morning of June 24, while the female sat on the nest brooding. On such an occasion the female awaited the approach of the male with the food with open mouth and quivering wings. Her behavior

very closely resembled that of a fledgling bird awaiting the arrival of a parent with food.

Nest No. 2 was discovered when hardly finished on June 13. On the 16th it contained two eggs and on the 18th four eggs. Incubation had commenced on the 18th as I saw the male feeding the female on the nest several times. These eggs hatched on June 29, making the incubation period about eleven days. Only two of the eggs hatched, the other two remaining in the nest for some time.

On June 30 the blind was erected and an attempt was made to use it the same day. The birds, however, proved so wild I gave it up and it was not until July 3 at 3:30 p. m. that anything could be accomplished. In direct contrast with the other pair of warblers, the female at this nest was wild and nervous, the male feeding twenty-four times and the female ten during the three hours the nest was under observation. The male had fed eleven times before the female became enough reconciled to the blind to feed the young. During this time the young were fed thirty-four times, during which 26 green larvae, 11 small winged insects, 1 spider, and 7 unrecognized objects were fed to the young. As remarked in discussing the first yellow warbler nest the habit of carrying food in the tip of the bill was marked and made it comparatively easy to identify larvae. At both these nests there was a great abundance of small dipterous insects and small larvae within a few inches or feet. This may have had some influence on the quantity of food carried on each trip by the parent as I have noted other warblers with beaks fully loaded coming to the nest. At these nests there were few times when more than one insect was carried.

The excreta at both nests was disposed of either by swallowing or carrying away and the nests were kept scrupulously clean.

Redstart (*Setophaga ruticilla*)

On June 26, 1915, while camping on Mormons Ridge north of Marshalltown, Iowa, I discovered a redstart nest containing one egg. This was a dainty nest woven of grass, hair, and rootlets in a fork of a hazel bush about four feet from the ground. On each of the two succeeding days, June 27 and 28, an egg was laid and on the afternoon of the latter date incubation commenced. I watched the nest for three hours on the afternoon of the 28th. During this period the male came once to feed the

female and sang at the nest for some time before taking his departure.

On July 13 I returned to Mormons Ridge and found three young about three or four days old. I immediately erected a blind at the nest and returning at four in the afternoon found the parents still making more or less fuss over the blind. I returned at 7:50 a. m. on the morning of the 14th and staid until 11:40 a. m. During this time I succeeded in exposing many films but failed to secure good negatives.

During the five and one-half hours that I watched the nest the nestlings had 30 feedings, 10 of which were made by the female and 20 by the male. I found it impossible under the conditions at this nest to identify much of the food except in a very general way. The bushes simply swarmed with minute insects, mostly dipterous, and small green larva, a large portion of which were geometrids. Twenty-two winged insects, sixteen larvae, one fly, and one spider were recognized during the thirty feedings, and on three occasions when the young were fed I could make out nothing as to its character.

Of the two parents the female was much the more shy and timid. The day was hot and the nest partially exposed to the sunshine. The male seemed to realize the necessity for brooding the young. Several times he chased the female through the bushes scolding angrily until she settled on the nest. I can not say whether he was really trying to force her to brood the young but his actions had every appearance of such an effort. The female was manifestly much worried by the blind while she was brooding. At first she twisted and turned continuously, but toward the end of the observation she became more quiet.

The male at this nest displayed a greater freedom from "nerves" than any male bird I ever watched. When feeding he came boldly to the nest after the first two trials. The click of the camera, which was sufficient to send the female from the nest in headlong panic, merely caused him to lift his head and stare into my face through the peep-hole in the blind, which was eighteen to twenty-four inches away. It was very evident that he saw nothing to fear in the muslin blind or the clicks that emanated from it and that he could not understand the absurd behavior of his wife. She gradually became reconciled to the situation when she saw no harm coming to her mate.

The actions of the two birds, however, were very interesting and I only wished it were possible to remain longer.

ROBIN (*Planesticus migratorius migratorius*)

During the course of several years' study of nestling birds and behavior of parents at the nest I had occasion to work at two robins' nests. The first one was a full day study at Sioux City, Iowa, and the second a period of ten hours spent over several days securing photographs. During this time notes were made on the behavior of the birds.

Nest No. 1 was located in an apple tree about eight feet from the ground. It was in all respects a typical robin's nest both in structure and location. It was necessary to build a plaform for the blind in order to see into the nest. The special purpose of the study was to determine if possible the amount of fruit fed to the young under favorable conditions. Within twenty yards of the nest tree lay a 2-acre field of strawberries and the edge of a 20-acre cherry orchard a hundred and fifty yards away, both containing an abundance of ripe fruit. The two nestlings were well grown, in fact almost ready to leave the nest. The nest was under observation from 4:20 a. m. until 8:00 p. m. on June 30, 1913.

During this time the female brought food to the nest 43 times and fed a total of 71 objects to the young. On ten occasions she fed both young from the supply she carried. Nestling No. 1 was fed 27 times and No. 2, 26 times. The food was somewhat roughly classified as follows: 15 crickets, 1 grasshopper, 5 maybeetles, 6 other beetles, 1 bug, 10 cutworms, 4 other larvae, 22 earthworms, and 7 or more insects so badly mutilated as to be unrecognizable. As many as four earthworms were counted dangling from the beak on one trip. It is not desired that this be considered the maximum number but rather the minimum. In other words, out of a mass of worms carried four were actually distinguished out of possibly a greater number.

The female did all the feeding, the male spending his time in the tops of nearby trees, singing. The young were well feathered out and the nest well shaded, which may account for the fact that there was no brooding while the nest was under observation.

Early in the afternoon a farmer started plowing a piece of ground about 150 yards away and the female at once commenced to visit this land to pick up the earthworms exposed by the plow. She continued to feed earthworms as long as the plowing was carried on.

The amazing thing to me in this day's observations was the

fact that no fruit was brought to the nestlings, although strawberries and cherries, both fruits for which the robins have a fondness, were convenient. I often saw adult robins feeding on the two fruits but this bird never brought any fruit to the nestlings.

Nest No. 2 was discovered June 5, 1915. It contained four eggs which hatched on June 10. The blind was erected on the fifth some distance away and moved nearer a few feet at a time, so that by the time the eggs had hatched the parents were quite reconciled to its presence. To facilitate moving, it was put upon an open top buggy and moved about not only to this nest but to several others in the vicinity.

This nest was under observation 11 hours and 45 minutes during five different dates as follows: June 11, 3 hours and 20 minutes; June 12, 2 hours and 20 minutes; June 16, 1 hour and 50 minutes; June 17, 2 hours and 15 minutes; June 18, 1 hour; June 21, 1 hour.

This nest was in an apple tree in the midst of an orchard. Mulberry trees and raspberry bushes were near by, but at no time while I watched did the parents feed any fruit to the nestlings. The female was frequently seen feeding on the mulberries and a flock of goldfinches were noted once feeding on the ripening fruit.

During this time the nestlings were fed 34 times by the male and 19 times by the female, a total of 53. This difference was not due to any timidity on the part of the female but to the necessity of brooding the young. During the 53 feedings 8 cutworms, 46 larvae of various kinds, some of which may have been cutworms, 38 earthworms, 1 maybeetle, 2 other beetles, 1 grasshopper, 3 crickets, and 13 unrecognized forms were detected out of a probably greater number. On 28 visits only one nestling was fed, on 19 two were fed, and on 7 the entire brood of three shared in the load of food carried.

The robins secured most of the food in a cornfield a few yards away—picking up the earthworms and cutworms exposed by cultivation on three out of the five days. At other times they foraged in the garden and about the orchard.

The excreta was carried away eight times and devoured a like number.

On June 11th the female brooded 1 hour and 55 minutes out of a total time of 3 hours and 20 minutes the nest was under observation. On the 12th 46 minutes were spent in brooding out

of 2 hours and 20 minutes; on the 16th 1 hour and 23 minutes out of 1 hour and 50 minutes; on the 17th, 56 minutes out of 2 hours and 15 minutes; and on the 18th, 13 minutes out of 1 hour.

On the 21st the young left the nest. The parents at this nest were exceedingly business-like in the care of their young. They paid little or no attention to the blind and carried on their activities in a regular stereotyped style. Both had a regular method of approach to the nest.

BREEDING OF THE GOSHAWK
(*Accipter atricapillus*)

At Petersham, Worcester County, Massachusetts, And Other Bird Notes from Petersham

BY J. A. FARLEY

I take pleasure in reporting the breeding of the Goshawk (*A. atricapillus*) last spring in Petersham, Massachusetts. This is the first record of the breeding of the Goshawk (*A. atricapillus*) in the state. Such an event has long been looked for as individuals of the species have been seen in summer more than once in the past in Massachusetts. The last summer record of the species was by Mr. Gerald H. Thayer who saw an immature Goshawk, August 15, 1900, in Berkshire County this state. (Auk, XIX, 1902, p. 296)

The two young birds in the Petersham Goshawk's nest were taken alive, in the down, May 22, 1902, by Mr. J. Nelson Spaeth of the Harvard Forest at Petersham. The nest had been reported to Mr. Spaeth who visited it first on May 20 when the two, downy, peeping young could be seen from the ground. The nest was high up in a tall white pine, and was a large affair composed of sticks mainly. The startled adult hawk betrayed the nest by flying from it. Only one adult hawk was seen and this bird uttered shrill cries in the woods when the nest was climbed to, but did not come near. The two young Goshawks in their natal down were photographed May 26; and again June 5, in their juvenal plumage. The first picture shows well the mixture of natal down and juvenal feathers sprouting through it—particularly the quills and other feathers of the wing; the second, the juvenal plumage with some of the natal down still adhering, especially on and around the head. One of these young hawks became partly paralyzed and died some time later, but the other lived until July 12.

I saw this bird July 1-4 at the Harvard Forest school, in Petersham. It was confined in a cage in the back yard. When I saw that this very young but practically full-grown Goshawk was in complete *juvenal* dress, I inquired immediately as to its antecedents and learned the facts just related. Although in fine feather and in apparent good health and spirits when I saw him, this young bird died shortly after my visit to Petersham—on July 12, as has been said. The bird was forwarded in the flesh to me, and a skin was made which is now, through the kind offices of Hon. Herbert Parker, in the Thayer Museum at South Lancaster, Massachusetts.

The juvenal plumage of a Goshawk at this age (probably about 2½ months) and born in Massachusetts may be worth a few words of description. The bird was full-grown, but some of its claws were dulled owing to contact with the ground in its cage; length almost 2 feet; length of tail (estimated) 10-11 inches. The bird was not in good condition for the determination of sex, but may have been a female. The cervix is almost tawny and so is in strong contrast to the darker scapulars and interscapulars which are, however, edged with a diminished shade of this same color. This beautiful edging of the feathers of the back extends also all over the wing-coverts; the secondaries in their perfect array are light (almost whitish) tipped; the large, long tertials are the same as the secondaries. The under tail-coverts with their dark "spearheads" are very long—so too the flank-feathers. The buffy suffusion, usual on the chest of young hawks, is rather deep in this specimen and extends well down on the breast.

I am informed by Mr. M. Abbott Frazer, the well-known taxidermist of Boston, of a previous nesting of the Goshawk in Massachusetts which, however, was never recorded. A dozen or more years ago he saw in a small collection of mounted birds in Townsend, Middlesex Co., an adult female Goshawk, together with two badly-blown eggs which were said to have been taken from her nest in that town. Mr. Frazer tells me that he sent one of these eggs by mail to Mr. William Brewster but it was broken in transit. Mr. Brewster kept the fragments of the egg, but never published the record. Mr. Frazer cannot now recall the date which was given him as that of the finding of this nest.

I am glad also to announce the summering of the Winter Wren (*N. hiemalis*) in Petersham. This is the most eastern record of the species in summer in many years in Massa-

chusetts. In 1884 Mr. William Brewster found the bird breeding in Winchendon, another large and very well-wooded Worcester Co. town lying to the north of Petersham and on the New Hampshire state line. There is also the still older record of the breeding of *N. hiemalis* before 1883, in Lynn, made by the late George O. Welch; and the very important and recent record of a nest of this species in Rhode Island, only a few miles from the sea, found by that indefatigable nest-hunter, Mr. Harry Hathaway of Providence. These "eastern" breeding cases of *N. hiemalis* may be wholly accidental; but Winchendon at least has a lot of spruce and balsam, and adjoins Rindge, N. H., another town with plenty of spruce and fir and other northern plants.

Professor R. T. Fisher, director of the Harvard Forest, himself was the first to note the Winter Wren in Petersham. A former member of the U. S. Biological Survey Professor Fisher is ornithologist as well as forester. As director of the Harvard Forest he knows every nook and corner of his 1,775 acres of woods. For the first time in his experience he heard on July 2 of this year the song of the Winter Wren in Petersham. The bird was in a small hemlock swamp in one of the Harvard Forest tracts. On July 3, in company with Professor Fisher and Mr. R. L. Coffin of Amherst, I visited this hemlock swamp where we all saw and heard to our heart's content the Winter Wren as he rummaged around among the fallen trees, stumps, rocks and underbrush. This hemlock swamp has a rocky bottom, more or less, and a sphagum carpet, and the ground is cumbered with many up-turned trees. It is perhaps one-half acre in extent, and lies in one of the extensive Harvard Forest "tracts," with the foaming East Branch of the Swift river close by. On July 3 the oxalis was still in bloom in this relatively cool place. We noted a 25-foot mountain ash and some black ash, together with mountain maple and yellow birch and more or less rather low and scattering *taxus*.

Professor Fisher tells me that the Pileated Woodpecker (*Phlœotomus pileatus abieticola*) is a resident species in Petersham, and that he considers it to be pretty nearly a common bird although never of course abundant. It should be recalled in this connection that about 70 per cent of the large town of Petersham is wooded country and that a good percentage of this is old heavy timber. Therefore, it would be strange indeed if such a timber-loving species as the big "Black Woodpecker" was not a resident here.

On the evening of July 1 I heard a White-throated Sparrow (*Z. albicollis*) singing in the spruce swamp in the rear of the Harvard Forest dormitory. Professor Fisher has noted this summer three other singing "Peabody Birds" at widely-separated points in town. Last year (1921) the species was rather common in Petersham and bred near the Forest headquarters—as it did this season.

There was a breeding pair of Juncos (*J. hyemalis*) this year near Professor Fisher's house and the species was noted also in 1921 in Petersham. Professor Fisher found in 1921 a Junco's nest in the adjoining town of Hubbardston.

The large and well-wooded town of Petersham lies in the northwestern quarter of Worcester County. Like most of this elevated part of the state the town's surface presents a series of broad ridges whose trend is north and south, the general level of the ridge-tops being 1,100 feet while the intervening valleys are at 700 to 800 feet. It is part of the central plateau or upland which stretches across Massachusetts from the New Hampshire to the Connecticut state lines. The famous Harvard Forest in Petersham is in three separate tracts which total 2,068 acres of which 1,775 acres are forested. There is much white pine in this large acreage as elsewhere in this and adjoining towns. There is some spruce in swamps in the Harvard Forest, the largest swamp being in the "Meadow Water" tract; there is a smaller spruce swamp in rear of the Harvard Forest dormitory. Besides white pine there is a good deal of hemlock in town, and some of this timber in the Harvard Forest is old and very large. In the Forest also there are still a few small pieces of virgin timber. Some of the finest white pines, both as to number and size of trees, in the state today grow in the Harvard Forest. There are hundreds of other acres of woods in the town which also contain much white pine. Lovers of trees will be glad to know that the timber in the Harvard Forest is being handled in the most intelligent and progressive way, and that the land in no case is ever denuded. There are some large woodland holdings outside the Harvard Forest tracts, which are in the hands of owners who appreciate both the aesthetic and commercial value of forest trees, and hence do not carry out wasteful cutting methods on their properties. Thanks to the policy of Harvard University and of these individual owners, it results that in Petersham there is a great forested area of the utmost

importance which preserves for the future, as for today, the most beautiful of the natural resources of the state.

Practically all of the small state of Massachusetts, like the rest of southern New England, is Transition country. Of particular interest in this region is the relatively cool, northern area in which Petersham lies, from the fact that it exhibits a rather notable mingling of "northern" and "southern" trees. Thus, in the woods of Petersham grow important trees of the North, more or less typical of the Canadian faunal area, like the red pine, canoe and yellow birches, sugar maple, beech, basswood and a little red and black spruce. On the same ground grow also such rather characteristic trees of the central hardwoods region to the south (more typical, therefore, of southern Connecticut and the Middle States) as the hickory, tupelo, sassafras, pitch pine and various species of oaks, chief of which is, of course, the white oak oftentimes so splendidly developed in Massachustts east of the Connecticut river. But the trees which dominate chiefly in the woods in this section are those which attain or at least approximate their highest development in central New England—as the white pine, red oak, chestnut (before the blight), white ash and hemlock.

There is not enough of Canadian zonal plant-life in Petersham for the town to be considered in any sense within the Canadian faunal zone. It lies only on its very "ragged edge", so to speak. Nor are the Canadian faunal birds that summer here many. They are few, both as to numbers and species. Nevertheless, such an extensively wooded area as Petersham, much of it of sizable timber, must in the very nature of the case always show interesting things in the bird-line. A case in point is the Pileated Woodpecker, resident here as one would naturally expect this typical woods-bird to be. As one would naturally expect, also, where there is so much white pine, that white pine bird par excellence, the Blue-headed Vireo, is not only common but relatively abundant. Most plentiful always where white pines are most plentiful—the more white pines, the more Blue-headed Vireos, states the case in a nutshell—the song and the delightful minor notes of the Blue-headed Vireo are ever in the ear in the pines of the Harvard Forest tracts and in other "stands" in town. I have nowhere else in Massachusetts found the species so plentiful except in that other white pine country, southeastern Massachusetts, including southern Plymouth Co., but not Cape Cod, where it is also a common woodland bird.

A SKETCH OF THE WILSON ORNITHOLOGICAL CLUB*

By Thomas L. Hankinson

For the advancement of a science like ornithology, it is desirable that all phases of the subject be studied at all times. Taxonomy is necessary to give clearness of reference in dealing with species, and this is necessary for all bird students, whether they be morphologists, embryologists, ecologists, economic ornithologists or simply field observers. Morphology is fundamental to the other subjects. Taxonomy leads naturally to ecology; and each is fundamental to the other, and both are necessary for the understanding of economic ornithology. All of the phases of bird study are closely related to each other, and lines of demarcation are not easily found.

Ornithology has had a very symmetrical growth, which has not been the case with all the other natural sciences. Ichthyology, at least in America, has been quite one-sided in its development. Its technical literature is just beginning to include details of the ways of living fishes, and fish ecology is in its infancy. The literature of American birds on the other hand, is filled with facts concerning the lives of birds from studies of their food, nesting, migrations, songs, and activities generally. All the progress has been rapid, and I think I can safely say that no one large class of animals, certainly of vertebrates, is as well understood as the class of birds.

This remarkable and well-proportioned advancement is due to the large number of bird students and their diversity of interests and to the fact that they have been willing to make concerted efforts in their studies by forming such organizations as the American Ornithologists Union, The Cooper Ornithological Club, and the Wilson Ornithological Club. While it has been the aim of all these organizations to advance ornithology with interest shown in all phases of the subject, there has been some tendency to specialize. The Wilson Club has especially encouraged outdoor ornithology; and it seems to me that this leaning has been a very fortunate one, since the members of the Club have been largely from the central part of the United States, the region where there has been such a remarkable development of agriculture, resulting in the drainage of many swamps, the breaking of virgin prairies, and elimination of vast areas of

*Address of the President at the Fortieth Stated Meeting of the American Ornithologists Union held at the Field Museum of Natural History, Chicago, Illinois, October 24-26, 1922.

woodland and natural conditions generally. There have been, on account of the changes in bird environment, many changes in the bird population. Species have become readjusted to new environments in some cases; some have increased and some have decreased in numbers, and a few have seemingly disappeared, altogether. Data on the bird life during these changes and on the primitive homes of birds in the region is of much value to ornithology, and many of these data have been gathered by the Wilson Club members and permanently recorded in the pages of their Bulletin.

It is outdoor ornithology that attracts the amateur; and professionals come from amateurs. It is important, then, to aid the amateur, and this has been a function of the Wilson Ornithological Club. It has encouraged amateurs to become associate members and to subscribe to the Bulletin and to use its pages for publication of their important observations. With a careful and discriminating editor like Dr. Lynds Jones, there has been little chance of unscientific material getting published; and as far as I can judge no such material has yet crept into the pages of the Wilson Bulletin. Advice as to proper methods of bird study, very useful to beginners, has been given by the Bulletin, especially through editorials. Amateurs need to have their attention called to the value of intensive bird studies to prevent many of them going on thinking that they are exhausting the possibilities of field work when they are naming and listing the species they see on long hikes. They have had good examples of thorough studies of comparatively small subjects through such papers, published in the Bulletin, as, The Monograph of the Flicker; The Broad-winged Hawk, The Oberlin Grackle Roost, and the Nest Life of the Catbird. Biography of great naturalists is always stimulating to young naturalists, and the account of the life of Alexander Wilson that ran through several numbers of the Bulletin certainly must have contributed to the enthusiasm of beginners. Amateurs as well as professionals, therefore, have found membership in the Wilson Club of value to them in their work.

The Wilson Ornithological Club has been remarkably successful in obtaining the united efforts of field ornithologists in making special studies, such as distribution through the census method, and migration, through records of occurences and through the relatively new method of bird banding. At present the Bulletin has a Bird Banding Department, and seven pages in

fine print are given to the subject of bird banding in the June 1922 number of the Wilson Bulletin.

Wholesale bird and egg collecting has not been encouraged by the Wilson Club, and the Club has not interfered with those who have found it necessary to kill some birds for really scientific use. The Audubon Societies have always had a good support from the Club and have found it willing to coöperate with it in all good methods of reducing unnecessary bird destruction. As long ago as 1898, Dr. R. M. Strong in his President's address before the Club said: "I wish to encourage to the fullest extent the active coöperation of the members in the various movements toward the protection of birds, which are now on foot. We can do much by our example and influence . . . .The whole chapter should constitute itself a committee on bird protection". Later in 1903, an editorial states: "We do not pose as a society of bird protectors, but we expect to exert all our influence toward a sane policy of protection everywhere and at all times."

We are not an organization of "bird lovers", and do not publish a magazine of popular ornithology, although most of the members are interested in the kind of ornithology that is most popular, that is outdoor bird study. The Wilson Ornithological Club is one of real students of birds and stands for scientific ornithology pure and simple. Again quoting from our editor: "While we stand for field study, because we believe that here we can do the most good to the cause, we still hold ourselves plastic enough to enter any field of study and investigation which may promise large results in the increase of knowledge."

In endeavoring to accomplish its ends, the Wilson Club has had a hard struggle. Several times through lack of funds its future has been exceedingly uncertain, and twice it was decided to suspend publication of the Bulletin, but it was proved worthy to live, each time, by forthcoming of aid largely unsolicited from those who seemed to feel the Bulletin essential to ornithology. The rugged road of progress has been followed partly through choice, for it has been the policy of the Wilson Ornithological Club to give members maximum returns in publication for the dues they pay, and practically all the money of the treasury goes to the Bulletin. A reserve fund has not been ventured. The editor has not only given a good part of his energies to the Wilson Bulletin for more than twenty-five years, but he has personally aided in financing it at critical times. Allow me to assure this gathering that any irregularities in the history of

the Wilson Bulletin have not been due to any noticeable ebb and flow of enthusiasm in the Club.

It now appears evident that the critical times for the Wilson Club are all in the past and that it is now recognized by the best ornithologists as a strong factor in the advancement of the scientific study of birds. A piece of evidence of its good standing is the present meeting in Chicago with other important associations including the American Ornithologists Union.

As an officer of the Wilson Ornithological Club, may I close this address with its hearty welcome to the American Ornithologists Union and with the assurance of the pleasure that all the members feel from the Club's being one of your hosts here at Chicago.

LIST OF WARBLERS OF CLARENDON COUNTY, SOUTH CAROLINA

BY E. VON S. DINGLE

So far as I know, twenty-two species of Warblers occur here (Clarendon County, Central South Carolina), and of these, ten have been found to breed. The list is as follows:

1. Black and White Warbler (*Mniotilta varia*).

Transient visitant; the earliest records for its arrival are March 29, 1920, and March 20, 1921. It remains until in May, the latest being May 12, 1908. On the return migration (fall), the earliest is July 2, 1909, and the latest record is October 23, 1909.

2. Prothonotary Warbler (*Protonotaria citrea*).

Common summer resident; breeds commonly. It arrives about the middle of April and I have never seen it after August 19. On June 7, 1919, a nest was found containing five young, nearly ready to leave. The nest, made of cypress leaves, was built in the natural hollow of a small tree, and was eight feet up. On June 19, 1919, a nest containing three eggs was found; the female was incubating. It was one and a half feet up.

3. Swainson's Warbler (*Helinaia swainsoni*).

Very local summer resident; it is found in heavily timbered swamps where the cane grows in abundance. A nest and three eggs were found on June 10, 1921; the bird was incubating and would not leave until I touched her.

4. Worm-eating Warbler (*Helmitheros vermivorus*).
Rare; some of the records are as follows:
1907. September 20.
1908. September 7.
1910. April 29.
1919. April 29.

5. Parula Warbler (*Compsothlypis americana*).
Some of the records undoubtedly refer to *Compsothlypis americana usnaea*, but no attempt was made to separate the two.
The Parula Warbler is an abundant summer resident wherever the "Spanish" moss grows. It always arrives in March, the earliest record being March 19, 1909. The latest is October 2, 1921.

6. Cape May Warbler (*Dendroica tigrina*).
One record; a male, April 27, 1910.

7. Yellow Warbler (*Dendroica aestiva*).
Rare; the records for it are as follows:
1909. May 3.
1921. April 29, May 5.
1922. May 1, May 4.

8. Black-throated Blue Warbler (*Dendroica caerulescens*).
Very common in spring, but rare in fall. The earliest record is April 18, 1908, and the latest May 22, 1909. Fall records are very few, but I recorded it on October 16, 1909.

9. Myrtle Warbler (*Dendroica coronata*).
Abundant winter visitant; it is generally first seen during the first week of November, and remains as late as May 2. It is somewhat irregular in its movements.

10. Blackpoll Warbler (*Dendroica striata*).
Uncommon May migrant.

11. Yellow-throated Warbler (*Dendroica dominica*).
Common in summer; nests in the "Spanish" moss. The earliest record is March 13, 1921. It must be an early migrant, and I have not seen it after August 19.

12. Pine Warbler (*Dendroica vigorsii*).
Abundant permanent resident and breeder in the pine woods.

13. Palm Warbler (*Dendroica palmarum*).
Some of the records probably refer to *Dendroica palmarum hypochrysea*. Very common in fall, winter and spring; the

earliest record is September 24, 1921, and the latest is April 22, 1920.

14. Prairie Warbler (*Dendroica discolor*).

Common in spring and fall, but has been recorded once in June,—June 10, 1922. The earliest record is April 6, 1919, and the latest October 23, 1909.

15. Oven-bird (*Seiurus aurocapillus*).

Common migrant; for the spring migration, the earliest record is April 15, 1921, and the latest May 18, 1908. The earliest date of return is August 19, 1921, and the latest November 15, 1907.

16. Water-Thrush (*Seiurus noveboracensis*).

Spring, late summer and early fall migrant. This bird is much less common than it was ten years ago. April 6, 1910, is the earliest spring record and May 26, 1920 the latest; on the return migration, July 7, 1914, is the earliest and September 20, 1907, the latest.

17. Louisianna Water-thrush (*Seriurus motacilla*).

Rather rare summer resident; the records are too incomplete to form any idea of its period of stay here. On June 24, 1921, a pair of these birds were observed feeding a young bird on the bank of a stream.

18. Kentucky Warbler (*Oporornis formosus*).

Common summer resident in heavily timbered swamps and wet woods. The earliest arrival in spring is April 28, 1909. I have seen a number of young birds, unable or just able to fly. On June 10, 1921, a nest was found which contained four young.

19. Southern Yellow-throat (*Goethlypis trichas ignota*).

Some records may refer to *G. trichas*. A very common breeder; it is a permanent resident, as it winters occasionally.

20. Yellow-breasted Chat (*Icteria virens*).

Fairly common, but very local, summer resident; the earliest date of arrival is April 28, 1908; I have never seen it after July. The only nest I have seen was discovered on June 15, 1921, and contained three eggs; four eggs were laid in all. This nest was built in a small bush in a very accessible place,—among a scattered growth of bushes on the edge of a field. This Chat was remarkably unsuspicious, and allowed me to watch her as she incubated from a distance of seven or eight feet.

21. Hooded Warbler (*Wilsonia citrina*).

Very common summer resident, arriving occasionally as early as March 29. The latest record is September 10, 1909. The Hooded Warbler is a common breeder.

22. Redstart (*Setophaga ruticilla*).

An abundant migrant, especially from mid-summer to late fall. The earliest record is March 24, 1911, and the latest spring record is May 22, 1909. July 18, 1908, and October 21, 1920, are the earliest and latest records, respectively, for the fall migration.

Summerton, S. C.

RANDOM NOTES FROM ARKANSAS.

H. E. WHEELER, CONWAY, ARK.

The following observations on certain birds of this state are given chiefly for their interest from a distributional standpoint. The several references made to the observations of Mr. Arthur H. Howell are taken from his list of the Birds of Arkansas, published by The Biological Survey in 1911.

Blue Goose (*Chen cærulescens*)

A crippled specimen of this species dropped into a small artificial lake near Conway, in Faulkner County, early in the spring of 1922 and at this writing (September 25th) was still making himself at home among a flock of domestic ducks. This species is new to Mr. Howell's list.

Greater Yellow-legs (*Totanus melanoleucus*)

One bird of this species was observed for a day or two during the middle of May (1922) in the same pond as above noted. On May 29 this pond attracted a belated visitor in the shape of a Lesser Scaup Duck.

Turkey Vulture (*Cathartes aura septentrionalis*)

A set of two badly incubated eggs was collected from a cliff on the Arkansas River in Faulkner County on June 5th, 1922. Here this pair of vultures has nested for many years though subject to frequent molestation. When exploring the cliffs of Frog Bayou in Crawford County I learned that formerly hundreds of pairs of "buzzards" had formerly nested there, but that a bitter and persistent prejudice on the part of a few individuals

in the neighborhood had been the means of practically exterminating them. There was not a pair left to nest there this season. The boys of the community had dilligently sought out every opportunity to break up every nest, and it is not likely that they will attempt to regain footing in this region again.

It should not be understood however that the species is decreasing in Arkansas.

PILEATED WOODPECKER (*Phlœotomus pileatus pileatus*)

Whenever this species is reported as becoming rare let the reported reporter visit Arkansas. The writer will be glad to show even the man from Missouri. In nearly every heavily timbered section of Arkansas this magnificent species is to be found, and it is not nearly as difficult to observe as the suposedly commoner Hairy Woodpecker. The nesting sites of this species are not so difficult to find, but the birds are gifted in the selection of situations which are ideally inaccessible. For the most part this is a huge "snag" or deadened tree, which cannot be climbed, and which will likely fall before the summer is over.

Six nests have been visited this year (1922) from all of which sets have been collected. One of them contained three eggs, three of them four eggs, and one of them five eggs. In last season's takes there was also a clutch of five. These have been collected from Yell, Pope, Sebastian, and Faulkner Counties.

This bird, often designated by the natives as the "Indian Hen," is now seldom shot for its plumage, and it has learned to be wary of the man with a gun. We have heard the name "Wood-chuck" applied to it, and even more frequently, both in Alabama and Arkansas, the title, "Lord God." It is a mighty "excavator," the entrance to most nests is not only large, but the cavity beneath is deep and very ample.

RED-HEADED WOODPECKER (*Melanerpes erythrocephalus*)

This species, as might be expected, is distributed over the entire state. We have found it abundant in almost every county visited, there being apparently one exception. But while formerly common in Pope County and in all the lower foothills along the mountain streams it does not now seem able to maintain itself in these situations. Not a single bird was observed in a wide belt of country lying north of the Arkansas River and extending through the interior of Pope and adjacent counties. Is the Red-headed Woodpecker becoming a town bird? His favorite

nesting site is a telephone pole or suitably deadened timber in the open fields. He clings tenaciously to a chosen locality, and does not seriously object to association with the English Sparrow who may have taken lodging in an older nest in his "own" pole. The Red-headed Woodpecker generally lays a clutch of five eggs, though rarely six may be taken.

RED-BELLIED WOODPECKER (*Centurus carolinus*)

This beautiful species is common to all the regions visited in Arkansas, but it can hardly be said to be as sociable as it is reported to be. Somewhat inaccessible nesting sites are frequently chosen, and he is still a lover of the deep woods. One nest from which a full set of four eggs was taken was fully seventy feet from the ground, in the dead limb of an immense Post Oak. Five eggs of this species must be considered unusual. The note of this Woodpecker is less harsh than that of the Red-headed but cannot be mistaken even at a distance when one is familiar with it.

CHUCK-WILL'S-WIDOW (*Antrostomus carolinensis*)

This is the most abundant "goatsucker" in Arkansas, and quite generally distributed. It is especially abundant in the lower foothills of the Ozarks. I have found it very common along the Ouachita river in Garland and Hot Spring counties and especially so in Pope county along Big Piney creek. I have collected the eggs of the Chuck-will's-widow at Fayetteville in Washington county, near Conway in Faulkner county, near London in Pope county, and they have been collected near Van Buren and Fort Smith in Sebastian and Franklin counties.

WHIP-POOR-WILL (*Antrostomus vociferus*)

The area to which this species has been restricted must now be greatly extended. A set of eggs was taken this year on Big Piney creek, seven miles west of Dover in Pope county, on May 19th of this year. A splendid photograph of this nest was secured. Though much rarer than its larger cousin it can also be found in all the foothills of the Ozarkian uplift, and doubtless will be reported from the tier of counties along the western border of the state, well down to the Texas line.

RUBY-THROATED HUMMINGBIRD (*Archilochus colubris*)

It has been my good fortune to locate many nests of this little Hummer this season. The behavior of the female will

invariably betray her home. It is easier still to locate the "house" if the birds are building, as in the case of the Blue-gray Gnatcatcher, for the birds keep their territory pretty will cleared of intruding visitors. On one occasion the female Ruby-throat left her nest repeatedly to torment a family of Carolina Wrens, and to pay her respects to a Tufted Titmouse. Otherwise I think I should have never located the tiny nest situated 50 feet above ground, and so thoroughly concealed from view.

With us it would seem that the nesting site most preferred is one over-arched by some large protecting limb, and below the nest there is generally another heavy limb which makes concealment the more complete. The nest is thus placed on a limb protected from the sun above, and observation below, and singularly enough these protecting limbs are such that the wind seldom lashes them against the limb on which the nest is saddled.

Scissor-tailed Flycatcher (*Muscivora forficata*)

This species can now be definitely reported as a rather common Summer resident in Western Arkansas. However its range is limited to the small prairies of Sebastian and Crawford counties, and parts of Franklin county. It has not failed to nest almost in the heart of Fort Smith for many years, and it was my good fortune to observe several pairs of these birds on the edge of the city during the week of August 13-19, 1922. Whether the bird has established itself further inland along the western tier of counties is not yet known, but it is certainly not found north of Fort Smith.

(To be concluded in March Bulletin)

THE WILSON BULLETIN

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EDITORIAL

The editor cannot allow the opportunity to pass without expressing his sincere appreciation to our retiring Secretary and Treasurer for the aid they have given him in the editorial work. It has not been merely moral support, but real support in the various functions that make up the work of manufacturing a journal like ours. The Club sustains a genuine loss because they do not feel that they can continue to serve us in this capacity. They have earned a rest. Of course the activities of these two officers have not been limited to the aid given to the editor. The greatly increased membership of the Club, its improved financial condition, and its morale are largely due to their efforts in behalf of the Club. And to the new officers we extend a most hearty welcome. From what we know of them they are worthy successors of two whom it will not be easy to equal.

Our studies of the birds in the winter season have led us to the belief that at this time many birds are rather narrowly limited in their range. Whether this is true of individuals or not can only be accurately determined by banding operations. At this season there is so much danger that a bird confined in a trap for long will either be chilled or frozen, that it seems that the drop-trap is the only sort to use. That is, a drop-trap that is sprung by the person who is watching it. Of course it can be used about the home grounds, but this does not at all meet the need that I am thinking about, although it will accomplish certain results that are valuable. May there be somebody who can go out to where the birds live during the winter, set their drop-traps there, and learn from these operations just what occurs on the outside? That this is a very much needed work no one can question. We would like to see it done. If somebody will volunteer to lift the editorial burden and carry it, we would agree, with keen anticipations, to do some of this sort of banding hereabouts.

BIRD BANDING DEPARTMENT

Under the Direction of Wm. I. Lyon, Waukegan, Ill.

Following is a copy of the minutes of the first activities of the Inland Bird Banding Association.

October 23, 1922.

During the past year I have been corresponding with the Biological Survey in regard to forming a Bird Banding Association in the Mississippi Valley or the Central part of the United States and Canada.

In anticipation of forming such an organization I have written over 100 letters, and have induced at least twenty-five persons to take up bird banding.

As time advanced the logical place to form such Association seemed to be the A. O. U. convention, so I interested Mr. P. B. Coffin, President of the Chicago Ornithological Society to name a committee to promote a dinner for that purpose.

I had letters printed and mailed to about 75 persons who would be interested. I received answers and enough verbal acceptances from the announcement at the A. O. U. meeting so that when dinner time came, 52 were assembled at our first dinner, held at the City Club of Chicago, who signed as follows:—

S. Prentiss Baldwin, Cleveland, Ohio.
Leon J. Cole, Madison, Wis.
Mr. and Mrs. Wm. I. Lyon, Waukegan, Illinois.
Herbert L. Stoddard, Milwaukee, Wis.
Mrs. Cosie Clark Miller, Racine, Wis.
Dr. Frederick C. Test, Chicago, Ill.
P. B. Coffin, Chicago, Ill.
Henry B. Ward, Urbana, Ill.
Arthur D. Moore, South Haven, Mich.
Mrs. Ethel M. Towns, Milwaukee, Wis.
F. W. Rapp, Vicksburg, Mich.
Lucy V. Baxter Coffin, Chicago, Ill.
Harry C. Oberholser, Washington, D. C.
Frederick C. Lincoln, Washington, D. C.
Walter B. Barrows, East Lansing, Mich.
Amos W. Butler, Indianapolis, Ind.
Myron H. Swenk, Lincoln, Neb.
A. F. Ganier, Nashville, Tenn.
T. C. Stephens, Sioux City, Iowa.
T. L. Hankinson, Ypsilanti, Mich.
E. H. Forbush, Boston, Mass.
Lynds Jones, Oberlin, Ohio.
Althea R. Sherman, National, via McGregor, Ia.
Dr. W. H. Bergtold, Denver, Colo.
Theodore G. Ahrens, Ph.D., Baltimore, Ohio.
Dr. Wm. C. Herman, Cincinnati, Ohio.

Mrs. Wm. C. Herman, Cincinnati, Ohio.
Henry H. Covell, M.D., Rochester, N. Y.
Geo. Finlay Simmons, Austin, Texas.
Mrs. Alice B. Harrington, Boston, Mass.
Dr. A. H. Cordier, Kansas City, Mo.
Mr. and Mrs. Herbert W. Brandt, Cleveland, Ohio.
Miss Katherine McGregor, Cleveland, Ohio.
Edward F. Ford, Grand Rapids, Mich.
Arthur A. Allen, Ithaca, N. Y.
E. J. Sawyer, Syracuse, N. Y.
C. A. Mitchell, Riverside, Ill.
Mrs. H. J. Taylor, Sioux City, Iowa.
Margaret M. Nice, Norman, Okla.
Mrs. C. H. Gleason, Grand Rapids, Mich.
John F. McBride, Chicago, Ill.
Mrs. William M. Levey, Brookline, Mass.
Francis H. Herrick, Cleveland, Ohio.
Cheswell J. Hunt, Chicago, Ill.
Harry Harris, Kansas City, Mo.
Dix Teachenor, Kansas City, Mo.
Alfred Lewy, Chicago, Ill.
C. W. G. Eifrig, Oak Park, Ill.
Flora S. Richardson (Mrs.), Chicago, Ill.
W. D. Richardson, Chicago, Ill.

October 24th, 1922.

After the dinner was over, the members of the Wilson Ornithological Club adjourned to the adjoining room for their annual business meeting, and the remainder were called to order by Mr. Percival Brooks Coffin, who extended a welcome to all present, then turned the meeting over to William I. Lyon, who stated the purpose of the meeting, then called on Dr. Harry C. Oberholser who gave the Biological Survey position on banding.

Then Mr. S. Prentiss Baldwin explained the origin of trapping.

Mr. Frederick C. Lincoln explained the present banding situation.

Dr. Leon J. Cole, First President of the American Bird Banding Association gave some early history.

Dr. Frederick C. Test told of interesting Boy Scout Masters.

Dr. Lynds Jones spoke on publicity.

Edward H. Forbush, President of the New England Bird Banding Association, explained their progress.

The Chairman called for suggestions for organizing, and on motion, appointed the following nominating committee: Dr. Harry C. Oberholser, Percival Brooks Coffin, Frederick C. Lincoln, who adjourned to an adjoining room, and soon brought in the following nominations:—

President—S. Prentiss Baldwin, Cleveland, Ohio.

Vice-President—Dr. Leon J. Cole, Madison, Wis.

Secretary—William I. Lyon, Waukegan, Ill.

Treasurer—Herbert L. Stoddard, Milwaukee, Wis.

For Councilors—M. J. Magee, Mrs. H. C. Miller, P. B. Coffin, Dr. F. C. Test, Dr. H. B. Ward.

It was moved that those assembled proceed with election, and the entire ticket was unanimously elected by acclamation.

The newly elected President, S. Prentiss Baldwin, took the chair.

It was moved and seconded that the dues should be $1.00 a year, and that the constitution and by-laws be left for a committee to form. Carried.

A number of those present signed as members.

Then followed a general open discussion on Bird Banding until the meeting closed.

October 25th, 1922.

A directors meeting of the officers was called by the President during the noon recess of the A. O. U. Convention.

Present were Baldwin, Cole, Lyon, Stoddard, Mrs. Miller, Coffin, Test, and Ward.

Inland Bird Banding Association was adopted as the name of the organization.

The Secretary was authorized to purchase stationary and such other supplies as needed.

Methods of arranging funds were discussed, also plans for the future.

Wednesday evening at the banquet, the Bird Banders were again much pleased to find more evidence of their popularity in that wonderful occasional journal, The Auklet. On page 13, under New England Migration notes, they accuse Forbush of changing his motto to "A bird without a band is worth nothing in the bush."

On page 15 there appeared the following interesting news item — "Bandmaster Baldwin is said to be Lyon low Forbushes in which Lincoln's Sparrows may be trapped."

INTRODUCTION TO THE OFFICERS OF THE INLAND BIRD BANDING ASSOCIATION

President,—

Mr. S. Prentiss Baldwin, the Williamson Bldg., Cleveland, Ohio. Mr. Baldwin needs no introduction to those who are interested in birds, as his name will go down in history as the man who proved that systematic trapping would bring the best results in Bird banding.

Vice-President,—

Dr. Leon J. Cole, University of Wisconsin, Madison, Wis. Dr. Cole is in charge of the Department of Genetics of the University of Wisconsin. He was the first president of the American Bird Banding Association, and his pioneer work is too well known for further comment.

Secretary,—

Mr. William I. Lyon, 124 Washington Street, Waukegan, Ill. Mr. Lyon is a real estate broker. He was one of the main promoters of

this organization, has invented new forms of successful traps, and holds the world's record for handling birds in the past year.

Treasurer,—

Mr. Herbert L. Stoddard, Public Museum, Milwaukee, Wis. Mr. Stoddard is connected with the Public Museum of Milwaukee. He was formerly with the Field Museum of Chicago, is one of the most active and best bird men of this district, and recently placed over two hundred bands on young Gannets at Bonaventure Island.

The Councilors,—

Mr. M. J. Magee, Sault Ste Marie, Mich. Mr. Magee is vice-president of the Sault Savings Bank, a leader of the bird work in his city, and his work with the Evening Grosbeaks is well known.

Mrs. H. C. Miller, 1110 Main Street, Racine, Wis. Mrs. Miller was formerly an active worker in the Massachusetts Audubon Society and the Brookline Bird Club, is now one of the leaders of Racine Bird and Nature Club.

Mrs. Miller is doing active work to secure more members for the Inland Bird Banding Association along Lake Michigan.

Percival Brooks Coffin, 39 South LaSalle Street, Chicago, Ill. Mr. Coffin is a Bond Broker and President of the Chicago Ornithological Society and a leader in all bird work about Chicago.

Dr. F. C. Test, 30 North Michigan Avenue, Chicago, Ill. Dr. Test is a Physician, and Vice-President of the Chicago Ornithological Society. Dr. Test has been very active in inducing people to become interested in Bird Banding.

Dr. H. B. Ward, University of Illinois, Urbana, Ill. Dr. Ward is the head of the Department of Zoölogy in University of Illinois. He spent the summer of 1922 in Yellowstone National Park placing bands and making observations on Pelicans.

GRACKLES ATTACK JUNCO

On November 22, there were about two hundred Bronzed Grackles that stopped for rest in their migration in our yard while we were doing our morning trapping. A Junco had been trapped in one of the flat traps, and was hopping about trying to find an opening, when suddenly a Grackle made a dive from a nearby tree and tried his best to catch the Junco; then more followed until there were about twenty-five on the trap, all trying hard to catch the one poor little Junco. One of the Grackles was successful in pulling out some of its feathers just as reinforcements arrived in the shape of a club thrown at the flock.

We believe if they had not been noticed they would have killed the Junco, as it was becoming tired from the constant dodging, and surely the Grackles tried hard enough.

During the nesting season this year the Grackles spoiled nearly all the eggs of the Robins in our yard. Wm. I. Lyon.

BIRD CHARACTERS AND DISPOSITIONS

In the March issue of this Bulletin you were told about the White-throated Sparrows of 1921. This fall has brought some additional facts that are worth mentioning..

Number 17042 has shown an unusual disposition for tameness, and simply squats down and lets you pick it up to read its number, and is very quiet all the time it is held in the hand. Recently, when released from the trap she flew to a bush within six feet of the trap and stayed there quietly and watched while four new birds were taken out of the trap and banded, then, with a few twittering notes, flew to the ground in search of more food.

Number 17070 is a fighter of unusual ability and proclaims it in a very loud voice. As soon as the hand is put into the trap he starts his challenging, and when the hand gets near he advances to attack, and springs on the hand, pecking with all his might, and never gives up a single instant while being examined in the hand, and after release flies to the nearest branch to sulk and scold.

The White-throats are acting just the same as last year; about a dozen staying around like regular boarders, and we expect we will have to feed them until a good storm comes and moves them southward.

OWL KIDNAPS YOUNG FLICKERS

A pair of Flickers made a hole in a dead tree close to our house, and on June 20, 1920, the three young Flickers that were raised there were banded. During the following winter the squirrels enlarged the hole and filled it with leaves. The next Spring a pair of Flickers came to the same hole and scolded for a while, then started a new hole about five feet lower down the tree. By making a folding perch just below the hole, they were trapped and banded as a mated pair, and on June 2, 1921, their four young were also banded.

In 1922 the Flickers came there about the middle of April and scolded as before, but finally started a new hole a little to one side of the tree, and about an equal distance from each of the old holes.

On May 2nd a Blue Jay was observed making considerab'e fuss about the lower hole, which aroused suspicions, and with the aid of a ladder we reached the hole, and found a Screech Owl there. On removal we discovered she was sitting on five eggs which were all pipped ready to hatch, but fearing she would interfere with our Flicker family, we robbed the nest, banded the Owl and took her quite a distance from the tree before releasing her.

We had to be absent from home for about four weeks, and soon after our return we were ready to band the Flickers. We had observed that the old female wore a band but could not capture her to get the number, but the male kept his legs so well covered we were unable to see if he was banded.

On June 11th we started to band the young Flickers. Before we got our ladder, we watched the old Flickers feeding the young, and observed that the young were so old that the old birds did not enter

the nest, just going to the hole and calling the young up for food, so there was no chance of capturing the old birds to see their numbers, so we climbed the ladder, and as we passed the lower hole, noticed four owl eggs, of a second sitting, were in the hole, but all broken.

It was necessary to saw out a piece of the tree to get our hand into the hole, and as we opened the hole, out came an owl. We were surprised and annoyed, and took out the four young Flickers and examined them very carefully, but they were not harmed in any way, so they were banded and replaced in the nest. Our curiosity was aroused about the owl. The next morning, the 12th, we watched the old Flickers feeding the same as ever, but finally decided to see if the owl was around. On reaching in the hole there was the owl, and we promptly threw her out. On examining the young Flickers, found they were unharmed. On the 13th, everything happened just the same as on the 12th. On the 14th the same thing was repeated, but on examining the young Flickers we found about half of some small bird which apparently the owl had attempted to feed the young Flickers, and after putting the young back in the nest they were so far advanced that two objected to such treatment, and left the nest.

On the 15th the old Flickers were feeding the same as ever, and investigation showed the old Owl still brooding the young Flickers, but the remaining two also objected to the irregularities, and left. For the next ten days we looked into all the holes, but the owl and the Flickers had all left. We have examined the holes occasionally since then, but have not found a trace of the Owl.

In our experience with animals we have known cats and dogs taking other young when their own had been taken away from them, and have known chickens to hover most anything they could find, but this was the first experience with wild birds. W. I. Lyon.

WOODPECKERS SLEEP SOUNDLY

While banding birds there are many opportunities to study their habits. One interesting fact has developed from keeping birds indoors at night. In the shorter days of the winter months we are unable to be home before dark, but must visit the traps as soon as possible, for leaving birds in traps all night invites many disasters from storms, cats, rats, weasels, owls, etc.

On such nights, when the birds have been gathered from the traps and taken to the house to read the numbers of repeats, and band the new ones, it would be cruel to turn them out into the dark when they cannot find a roost, so they are sorted, separating the sizes to prevent fights and crowding in the small cages. On such occasions the birds are kept in our basement, where it is cool, and when we have occasion to go to the basement later, on turning on the lights, the Sparrows and Finches are always awake in an instant, but the Downy Woodpeckers all seem to sleep so soundly that we have walked past them to the next room, shaken the furnace, put the coal in, then pass them again without their awakening. It aroused our curiosity and we watched them very carefully, and they slept soundly.

Brown Creepers are even better sleepers than the Downys, and can be touched lightly without awakening them.

One or two cases of the Red-headed Woodpecker showed the same tendency. The White-breasted Nuthatch is another sound sleeper, but the Chickadee outdoes them all, and when they are touched to awaken them, they are generally mad and most of them scold.

Lately we had two Hairy Woodpeckers, and we watched them very closely, to see what they would do, but could not catch them, even asleep.

We had a few Flickers, but they were not sound sleepers, and the one Yellow-bellied Sapsucker that was trapped, slept through having the lights turned on in the room near his cage.

These observations make us believe that the birds that sleep in protected places sleep more soundly than those that perch in the more open places.

HOW FAR DO BIRDS GO WHEN THEY FLY SOUTH?

The marking of migratory water-fowl, as practiced by the collaborators of the Biological Survey, United States Department of Agriculture, has given evidence that it will be a most interesting and important investigation. Although the work has been in progress for only two years, notable results have already been secured.

The ducks and other birds, whose movements are being studied by this method, are caught, mainly by the use of special traps, light aluminum bands placed on one leg, and then released. Every band bears a serial number and the legend, "Biol. Surv., Wash., D. C." In the Washington office of the Biological Survey, these banded birds are card indexed so that when a hunter secures a duck bearing one of these bands and reports the data connected with its capture, by referring to the card file, the route covered by the bird in question can be easily ascertained. When such records are received, the hunter is advised where the bird was banded, while the person who attached the band is informed where it was secured.

During the fall shooting seasons for the last few years, a large number of mallards and black ducks, with a few blue-winged teal and other species, have been banded at a small lake about twenty miles north of Toronto, Ontario, and many interesting returns have been received.

Long Range Record

The best "long range" record for these Canadian ducks is that of a blue-winged teal, banded September 24, 1920, and killed two months and seven days later, in the Caroni Swamp, near Port of Spain, on the island of Trinidad, just off the coast of Venezuela. The shortest flight that this bird could have made would be over 3,000 miles. It is a well-known fact that blue-winged teals and certain other ducks that breed in North America spend the winter season in South America, but it was rather a surprise to learn that those individuals that had bred in Canada would make the long flight to South America, because the species also winters in small numbers in the Gulf region, and it is to that area that the more northern birds might be expected to go.

The return records of ducks of other species, banded near Toronto,

have afforded valuable data relative to their migration. The lake where the banding was done, Lake Scugog, is surrounded by marshes and thus offers excellent opportunities for the ducks to feed and rest before starting the long flight to the south. The trapping and banding was carried on continuously through the autumn, so that by the time the big southward movement began several hundred birds had been marked. At this time the season was open from the Great Lakes to the Gulf of Mexico and the migrating birds had to run a veritable gauntlet of sportsmen. A large number of "return records" were therefore received.

Mallards and Black Ducks

In tracing the route of these birds it seemed apparent that the mallards and black ducks traveled together and their course from Lake Scugog was southwestward along the shores of Lake Erie by way of the St. Clair flats. Here the route divided, the majority continuing toward the southwest, cross-country to the Ohio River, hence to the Mississippi Valley, where many of them spent the winter. The second group, that parted from their fellows in the vicinity of Lake Erie, took a southeasterly route, crossing the Alleghenies and reaching the Atlantic coast by way of Chesapeake and Delaware Bays. It is interesting to note that although both of these ducks are present and the black duck is plentiful along the coast of New England, none of the birds marked at Lake Scugog were taken in that region. The question that naturally arises is: Where do those ducks come from? So far we only know that some breed in that area, but we do not know just where the migrating brids come from that use that route. Bird banding will probably supply the answer when it has been applied more intensively at a larger number of stations.

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FIELD NOTES

NOTES FROM SOUTH ALABAMA

During the four months which I spent near Silver Hill, in South Alabama, I devoted my free time to the study of birds. The country is not thickly populated and is mostly covered with pine forests. There are many creeks and swamps with luxuriant vegetation. Silver Hill is about 12 miles from the gulf of Mexico.

The birds I found in the radius of about three miles from my home are:

Bittern (*Botaurus lentiginosus*). Only a pair migrating through.

Green Heron (*Butorides virescens virescens*). At a creek.

Wilson's Snipe (*Gallinago delicata*). Abundant, especially when migrating.

Bob-white (*Colinus virginianus*). Common. In flocks till end of April.

Mourning Dove (*Zenaidura macroura carolinensis*). Abundant. Did great damage in March destroying cucumber seeds aid young plants. (Cucumbers are raised here on a large scale.)

Turkey Vulture (*Carthartes aura septentrionalis*).

Black Vulture (*Catharista urubu*). Both common.

Marsh Hawk (*Circus hudsonicus*). Not abundant.

Sharp-shinned Hawk (*Accipiter velox*).

Sparrow Hawk (*Falco sparverius sparverius*).

Pileated Woodpecker (*Ceophloeus pileatus*). Rare.

Southern Hairy Woodpecker (*Dryobates villosus audubonii*). Not abundant.

Red-headed Woodpecker (*Melanerpes erythrocephalus*). Most common of all woodpeckers.

Red-bellied Woodpecker (*Centurus carolinus*).

Southern Flicker (*Colaptes auratus*).

Florida Nighthawk (*Chordeiles minor chapmani*). Very abundant.

Ruby-throated Hummingbird (*Archilochus colubris*). Rare.

Kingbird (*Tyrannus tyrannus*). The first was seen on March 27. Abundant.

Crested Flycatcher (*Myiarchus crinitus*). The first came on April 16.

Phoebe (*Sayornis phoebe*). Only migrating through.

Florida Blue Jay (*Cyanocitta cristata florincola*).

Crow (*Corvus brachyrhynchos brachyrhynchos*). Not abundant.

Southern Meadowlark (*Sturnella magna argutula*).

Orchard Oriole (*Icterus spurius*). Not rare in orchards. Is building his nest in the middle of April.

Florida Grackle (*Quiscalus quiscula quiscula*). In swamps.

Chipping Sparrow (*Spizella passerina passerina*). Only migrating.

Towhee (*Pipilo erythrophtalmus*). Only when migrating.

Cardinal (*Cardinalis cardinalis cardinalis*). Frequent, especially near swamps and creeks.

Purple Martin (*Progne subis subis*). Arrived in the first half of March.

Tree Swallow (*Iridoprocne bicolor*). Only migrating.

Loggerhead Shrike (*Lanius ludovicianus ludovicianus*). Very abundant.

Warbling Vireo (*Vireo griseus griseus*).

Prothonotary Warbler (*Protonotaria citrea*). On bushes at a creek.

Myrtle Warbler (*Dendroica coronata*). In winter.

Mockingbird (*Mimus polyglottos polyglottos*). Very abundant. The young ones leave the nest before middle May.

Catbird (*Dumetella carolinensis*). Rare.

Brown Thrasher (*Toxostoma rufum*).

Brown-headed Nuthatch (*Sitta pusilla*). Breeds from the end of March.

Blue-gray Gnatcatcher (*Polioptila caerulea*). At a creek in the shrubs.

Robin (*Planesticus migratorius*). Abundant in winter.

Bluebird (*Sialia sialis sialis*). They nest in the second half of February.

GEORGE BAUM.

FIRES IN TIMBER DESTROY MUCH VALUABLE WILD LIFE

The conservation of forested areas and particularly their protection from fire must go hand in hand with the conservation of most game, in the opinion of the Biological Survey of the United States Department of Agriculture. Shelter and food are necessities in the lives of the majority of animals and birds. Decrease one or both of these vital elements, which are supplied to a large degree in our forests, and the numbers of valuable wild creatures are correspondingly diminished.

Forest fires not only destroy the forest but eliminate the necessary food and shelter. The belief that burning over in certain localities is beneficial because it promotes a new growth of grass, ignores the fact that the grass thus obtained does not compensate for the destruction of trees and the shelter and food required by animals. Partridges in particular suffer from forest or brush fires. When their favorite places are burned over and their food and shelter are gone they are obliged to seek new localities and face new dangers.

Indiscriminate setting of spring fires in the southern states dislodges deer, opossums, raccoons, foxes, squirrels, rabbits, and other animals and endangers ground-nesting of birds in the timber, such as the woodcock, pheasants, wild turkey, and whip-poor-will. The woodcock is in some danger of extermination at the present time and deserves all possible protection. In seasons of drought, forest fires even invade marshy places and drive out fur-bearing animals as well as waterfowl and shorebirds. Many think that burning results merely in temporary inconvenience to the game, and may not realize that the food of many birds is largely the seeds and berries of the year before. Burning the brush also eliminates for months all shelter from natural enemies.

Burning of the ground cover in forests of longleaf and shortleaf pines kills the young trees as they emerge and results in thin, straggling growth. The burning of timber and other ground cover which should absorb and retain moistures also accelerates the run-off and af-

fects the stream flow at different seasons to such an extent that the supply of fish may be materially decreased.

During forest fires, game and other wild animals may be surrounded by flames and killed outright. If they succeed in escaping to adjoining areas they come into direct competition for food and shelter with the game already on that area and the chances of survival are lessened for all. U. S. Biol. Surv.

NIGHTHAWK MIGRATION NOTES

A decade ago the Nighthawk was a common summer resident in this part of Iowa. It returned in numbers each spring and made the Iowa environment its summer home; when it remigrated southward in the fall its ranks had been enlarged by many individuals—a result of safe nesting grounds to be found here. Without the sight of this graceful, long-winged bird, widely circling the sky in its erratic flight maneuvers, and producing the well-known sound so aptly described as tearing a piece of cloth, the calm summer evenings would have lacked a certain amount of charm that the regular evening nature chorus did not contain, however varied and interesting the latter might be. For years the Nighthawk added an important bit to the associations of city and rural life.

Now it is changed. The Nighthawk is no longer a summer neighbor and is surely missed. While it is true that a few Nighthawks are still summer residents here, the cases are isolated, and the bird can be classed only as a rare summer resident. The reason for this evidently cannot be laid to decrease in numbers of the species, but to a change in nesting grounds, which has perhaps been forced by the growing practice of the over-industrious farmer of turning every available acre of pasture or other semi-waste land into tillable soil to increase his own profits. Their natural nesting grounds become scarcer every year.

While it is apparent that the Nighthawk has appreciably decreased in many parts of the United States, it is not probable that it will ever become extinct, or perhaps any less abundant than at the present time. It seems to be very erratic in migration and choice of nesting grounds, sometimes being unusually abundant at a certain place for a time, then suddenly disappearing almost entirely for several seasons, as seems to be the case in my region.

Being especially interested in this subject, I have kept yearly records since 1919, and these show that the bird does not stop here to breed, probably going farther north, because it passes through in numbers in the fall migration and is not present in the summer. These records, given in part below, pertain to Buchanan County, with the exception of the 1919 Cedar Rapids record.

My 1919 list contains but three records of the bird. The first date is May 25, when a lone bird was noted at Cedar Rapids, Iowa; the others were August 23, two birds, and August 28, a flock of 25 (approximately).

In 1920 the Nighthawk was noted only three times, as follows: May 10, 1; August 30, several; September 12, 1.

The next season, 1921, the Nighthawk made a much larger represen-

tation on my records, nearly 100 birds being seen, and these on twelve dates. The first date was May 22, the last September 19, but none were seen during the period from June 12 to August 21, which includes the season for rearing their young. All but fifteen of the birds were seen after August 21.

My this year's record is much larger than that of 1921 and, judging from the size of the fall migration, the species is increasing its numbers rapidly. I made twenty-two records of the bird from May 19 to September 9; four of these dates were for spring migration, two for summer residents, and the remainder for fall migration. Roughly counting, there were 385 birds in all.

On the evenings of June 19 and July 2 (1922), while driving in Independence, Iowa, I saw one or two Nighthawks, but aside from these I made no other summer records for this county. I might add that on the evening of July 4 I noted several of the birds maneuvering in the air above the fairgrounds at Manchester, the county seat of an adjoining county. It was good to hear them again, even though it was above the clamor of a vigorous Iowa Fourth of July celebration. On August 21 the bird made its reappearance and was seen, in varying numbers, every day with three exceptions from then to September 9. During this period 372 birds were seen, according to my daily records. Owing to inaccuracies in counting or estimating the larger flocks, this figure represents only the approximate number. Their usual daily number varied from 3 to 20, although on September 1 about 45 were seen, and September 9—the last day—about 200 passed southward. These birds were all silent and, while most of them seemed to be proceeding in rather a leisurely fashion, some appeared to hunt in one vicinity for several days. Regarding the last day's migration (September 9), I take this excerpt from my journal: "It was cloudy all afternoon, with the clouds growing darker and heavier along toward evening, and at this time the Nighthawks were first seen. In all directions they were to be seen, some in rather large flock formations and others trailing along by themselves or far from a flock. Many were so high in the air that they looked more like specks than birds, and all seemed to be hunting food in a leisurely and not directed manner. It is very hard to estimate so many scattered individuals, but after surveying the locality I decided that 200 would be a conservative estimate. About 5:00 it began raining and many Nighthawks could be seen flying about high in the air in the rain."

A little over a year ago I raised the question of whether or not the Nighthawk was decreasing.* A number of people responded and each expressed the belief that the species had been declining rapidly and was becoming scarce in his or her particular region. Data were received from the following places: Hampton Falls, N. H.; Cincinnatus and Collins, N. Y.; Cambridge, Md.; Elkader and Nashua, Iowa; Carrington, N. Dak.; Edgewood, Lower Arrow Lake, British Columbia. I am much interested in this subject and any further information relative to the migratory movements and status of this wandering species will be gratefully received.

FRED J. PIERCE.

Winthrop, Iowa, September, 1922.

* *Bird-Lore*, Vol. 23, No. 4, July-August, 1921, p. 197.

FURTHER ROADSIDE CENSUSES IN OKLAHOMA

On May 20, 1921, and on seven days between May 29 and July 9, 1922, we have taken nearly 400 additional miles of "Roadside Censuses" in Oklahoma; since this makes us over 1000 miles of such counts in this state during the breeding seasons of the last three years it seemed well to compare these new censuses with those taken in 1920 * and to summarize the results. One hundred miles of these censuses were taken in the Panhandle—Texas and Cimarron Counties—on May 29, 1922, while the rest were taken in central Oklahoma extending southwest to Comanche County and north to Kingfisher County. All the region traversed was prairie and farm land.

The accompanying table gives the average number of native birds seen per mile in 1920, in 1921-22, and in all three years under differing conditions of weather and time of day. Our later results are much the same as the first; there are slightly more birds under each category except among those seen at noon. Thus we find after 1166 miles of Roadside Census during the breeding season in Oklahoma an average of five birds per mile during all weathers and at all times of day; of 6.4 in the cool of the day, and 3.8 in the heat of the day.

NUMBERS OF NATIVE BIRDS SEEN ON ROADSIDE CENSUSES IN OKLAHOMA

Weather	Time	1920 Miles	1920 Av. No. of Birds Seen per Mile	1921-22 Miles	1921-22 Av. No. of Birds Seen per Mile	Total Miles	Total Av. No. of Birds Seen per Mile
Pleasant	All Times	780	4.8	386	5.3	1166	5.0
Pleasant	All Times	696	5.2	336	5.9	1032	5.3
Rainy	All Times	84	1.4	50	2.8	134	2.5
Pleasant	Early Morning or Late Afternoon	395	6.2	241	6.8	636	6.4
Pleasant	at or Near Noon	301	3.9	95	2.9	396	3.8

As to the kinds of birds, the most widely distributed and most abundant in the total counts are in general the same as in 1920; yet the far western trips show an influence in the greater importance of Lark Sparrows and especially of Horned Larks. Of the nine most widely distributed birds in the first censuses and the total censuses eight are the same; Horned Larks take the place of Red-headed Woodpeckers when all the results are considered. The birds that were seen on half or more of the 65 censuses follow — the figures showing the number of censuses in which each kind was recorded: Mourning Dove, 58; Mockingbird, 54; Dickcissel, 49; Lark Sparrow, 46; Eastern Kingbird, 43; Bobwhite, 37; Bluebird, 36; Meadowlark (Eastern and Western), 35; and Horned Lark, 32.

In regard to total abundance, the nine commonest birds of the first 780 miles are still the most abundant after 1166 miles, although there is some shifting of relative abundance. The total numbers counted were as follows: Dickcissel, 999; Mourning Doves, 614; Horned Larks, 542;

* Wilson Bulletin, XXXIII, 3, 1921, pp. 113-123, 4, pp. 194-195.

Mockingbirds, 328; Meadowlarks, 328; Lark Sparrows, 268; Bluebirds, 216; Scissors-tailed Flycatchers, 179; and Kingbirds, 151.

Two thousand and fifty-five English Sparrows were seen on these censuses, an average of nearly two a mile; this is 26 per cent of all the birds seen and twice as many as the most abundant native bird—the Dickcissel.

MARGARET M. NICE AND L. B. NICE.

Norman, Oklahoma.

THE FISH CROW IN ARKANSAS

So far as the writer has been able to learn the Fish Crow (*Corvus ossifragus*) has never been reported from Arkansas. It would seem, from rather patient inquiries and persistent observation, that it is nevertheless a common resident. My attention was first called to this fact in the summer 1921. A country lad who has shown remarkaable aptitude in the study of our local bird life kept reporting to me the presence of a bird of somewhat smalled size than the crow and wanted to take me to sections of the Arkansas River flowing between Faulkner and Perry Counties where it was said to be common. During the same season a nest of this species was located in a thick woodland far from the river, and contained five eggs. In collecting them they were broken, and I did not have the opportunity of correcting my supposition that they were the the eggs of the common crow.

Fishermen who live along the river had often spoken of the "jackdaws" and "magpies," but still I thought they were only confused in matter of names, and were but referring to the self-same common crow. During the present season (1922) every doubt as to the validity of this species has been set at rest. On May 13th I visited the haunts of the Fish Crow, and located a nest which had just been completed but which at this time contained no eggs. It was a rather compact structure made of sticks and twigs of the cottonwood tree, lined with leaves and rootlets of the kind preferred by our Mockingbird. This nest was well toward the top of a huge sycamore 110 feet from the ground, and the tree was growing on the bank of the Arkansas River. The prospect for my climber was none too good, but he proved his ability on this occasion, as he had done on so many others, and we were further rewarded by seeing a large number of Fish Crows searching the river sections for food.

It was the first week in June before I could revisit this nest. On June 5th both male and female were present. The female was on the nest and did not leave it until the hand of the collector was almost on her. It contained three birds, just hatched, one egg hatching, and another egg with fully developed embryo. This egg, when measured, was found to be 1.41 by 1.06 inches, and typically marked.

The nest now contained no rootlets, but was lined with a mass of sycamore balls and horse hair! It was 18 inches wide, the inside diameter being about eight inches, and was deeply cupped, a little more than four inches deep. Both birds were constantly at the tree while these investigations were going on.

Since this time the birds have been under constant observation. The

species has been located in many places along the Arkansas River, and cannot be said to be uncommon. The nests are placed high, generally in situations far more difficult than the crow, and not infrequently at a conconsiderable distance from the water. It searches the fields for food as does the common chow, though its range generally parellels the river banks.

A singular thing occurred one day in a field some eight miles from the river. The same intrepid climber, who had become perfectly familiar with the habits of the species, was plowing in an open field and had turned up and accidentally destroyed a nest of Bob-white containing a number of eggs. Some of these he had put in his pocket, and soon after, observing a Fish Crow fly overhead, offered him an egg by tossing it in his direction. To his surprise the "crow" descended and took the egg, and several more which were offered in the same way. This lack of fearlessness, however, cannot be said to be a common trait.

Though a common species in Texas it cannot yet be reported from Oklahoma. Mr. Pemberton of Tulsa, has made most careful observations touching this point, and yet the species is persistently reported as occurring in the region about Fort Smith on the very border of the state. It can certainly be claimed for the following counties in Arkansas,—Faulkner, Perry, Pope, Yell, and Franklin, and its range will be doubtless extended to many more. It seems rather singular that neither McAtee nor Howell make any mention of it in their reports from Arkansas.

It is impossible to mistake the note of this bird. This has been given ample considerable by Captain Bendire in his great Monograph, and need here be only mentioned. The coarse "*caa-ah*" is altogether different from the "*caw*" of the crow, both in accent and tone, but there is a two-syllable "*ah-uk*," with a rising inflection, which is easy to imitate, and which will identify the bird at any time. The Fish Crow will respond to this call. It may be interesting to state that the young Fish Crows in the nest above referred to were all doing well in the latter part of August.

H. E. Wheeler.

Conway, Ark.

NOTES—HERE AND THERE

Conducted by the Secretary

Mr. B. T. Gault's new pocket Check List of the Birds of Illinois came from the press just in time for the Chicago meeting. This 80-page booklet, which is admirably arranged and durably printed, may be purchased of The Illinois Audubon Society, 10 So. LaSalle St., Chicago.

The American Association for the Advancement of Science, with which The Wilson Club is affiliated, is holding its meetings this year at Boston, December 26th to 30th. Next year The Association is scheduled to meet at Cincinnati and at Washington in 1924.

Messrs. A. C. Bent and Frank Willard spent the past spring in Arizona making field studies of the birds there. Mr. Bent secured some wonderfully fine photos as well as other material for his forthcoming volumes. Mr. Willard, who formerly lived at Tombstone, knew the ground as well as the birds. A better matched pair of field workers would be hard to find.

Among the fine paintings shown in the recent exhibition at The Field Museum was one of Canada Geese, executed with an unusually fine color effect, by Courtney Brandreth. Admirers of this picture will be interested to know that it is reproduced, in colors, in the November Country Life in America, together with several other wild fowl paintings by the same artist.

Rev. H. E. Wheeler of Conway, Ark., spent the month of July at Lake Junaluska in the high Alleghanies of western North Carolina, where he had opportunity to make some interesting studies of birds and in other branches of natural history.

The considerable amount of nature book advertising has paved the way for a new monthly journal. The Nature Magazine, of Washington, D. C., proposes to treat of all forms of natural history in a popular manner.

From Secretary Palmer, of the A. O. U., the writer is in receipt of a letter communicating a vote of thanks from that organization to The Wilson Club for the courtesies extended on the occasion of its recent meeting at Chicago. In reply we might truly say — "the pleasure was ours."

A reporter of one of the Chicago papers sat in at one of the program sessions at the Chicago meeting and, when it was over, rushed to headquarters to write up half a column to cover. The entire space was given over to the nuptial scandals Mr. Baldwin had discovered among his colony of house wrens. Such is newspaper "news va'ue."

Mr. H. A. Brandt of Cleveland spent several weeks the past spring in Utah and collected some nice sets of the rarer birds there. Mr. Brandt makes full use of the camera and notebook and has some choice material to show for his season's work.

The writer is gathering data on the present distribution of the Swallow-tailed Kite, with a view to ascertaining how near to extinction it is. Over most of its former range it has disappeared due no doubt to the easy target it affords the gunner by reason of its unwariness. Members, who have recorded it within the past few years, will confer a favor on the writer by sending him such data as they may have.

Dr. Wilfred H. Osgood of the Field Museum, accompanied by Messrs. Colin C. Sanborn and Boardman Conover, also of that institution, sailed in November for Chile, where they will engage in collecting material for The Museum. Dr. Osgood plans to return in the spring; the others are expecting to remain for a year.

Students of birdlife, within travelling distance of our National Forests throughout the land, are finding them to be among the most desirable spots in which to spend a few days for nature study. Auto roads and trails are being developed so that change of location or environment may be readily accomplished. 156,000,000 acres are included in the 149 preserves now established. A list of the Forests may be had by writing to the U. S. Forest Service at Washington. The creation or conservation in these Forests, of lake, marsh, and swamp areas, suited to the breeding of certain birds, is a field of activity that deserves the support of organized conservationists. To all but the naturalist, there is but one thing to do to a swamp or marsh area and that is to drain it. Most of the National Forests will eventually become National Parks.

Mr. Fred C. Lincoln, of The Biological Survey, spent part of October in Southern Illinois where he had good success in trapping and banding ducks. The birds were caught in flocks, chiefly in large pen traps made of poultry netting and located in shallow water.

An excellent group photo of the Chicago meeting was taken in front of The Field Museum. The prints, which are about 6x20 inches in size, may be had for $1.50, of Kaufman and Fabry, Photographers, 1125 South Wabash Avenue, Chicago. The writer has prepared a blueprint diagram showing the names of those appearing in the picture and will send a print to any member with his compliments.

It is with much pleasure that the retiring secretary greets his successor, in the person of Mr. Gordon Wilson of Bowling Green, Ky. The writer has the privilege of knowing him personally and has found him to be a most enthusiastic bird student and an "omnivorous" worker. As to whether or not he can lay claim to being a decendent of the famous early ornithologist, whose name honors our Club, the writer cannot say, but trusts at least that the name will prove no handicap. Our new Secretary is Professor of Literature and Language at Kentucky State Normal College.

Our new Treasurer needs no great amount of introduction to our members since he is already one of our most famous and successful bird-banders. The application he has shown in this work will serve him well in his new duties since the work of the Treasurer is no small

job. Mr. Lyon "earns his daily" by conducting a prosperous real estate business at Waukegan, Ill. Our retiring Treasurer, Mr. Fordyce, merited the well deserved resolution of thanks extended him at our recent meeting, for no one better than the Secretary knows just how much painstaking work he rendered in the discharge of his duties.

With this, your retiring Secretary lays down his pen and hands this department over to our veteran editor to maintain or abolish as he sees fit. The five years I have served The Club have brought me much pleasure and satisfaction, for the personnel of The Wilson Club is indeed a rare mixture of coöperation and good fellowship. The writer expects to improve the time, now made available, by doing some intensive ornitholgical work in his own state and in assisting with the furthering of the work of The Club in such ways as its officers may suggest.

A. F. G.

THE ANNUAL MEETINGS AT CHICAGO

The ninth annual meeting of The Wilson Ornithological Club was held at Chicago, Ill., on October 24th, 1922. In deference to the coincident meeting of The American Ornithologisits Union, to which The Wilson Club was a joint host, the one session held was confined to the transaction of business matters and election of officers for the coming year. All program features were merged with those of The A. O. U. and every coöperation was extended to the latter body in an endeavor to make their first mid-west meeting the largest of any in its history.

The business meeting of The Wilson Club was opened with President Hankinson in the chair. The minutes of the last meeting were reported by Secretary Ganier as being published in full in the March, 1922, Wilson Bulletin. There being no corrections or additions it was moved and carried that they be accepted and adopted. A committee on nomination of officers for the coming year was named, consisting of Messrs. Stephens, Jones and Gault. The report of the President consisted of a resume of the work of The Club for the current year and suggestions for possible fields for activity during the year to come. The report of the Treasurer, being unavailable until the end of the fiscal year, was referred to The Council, to be handled at that time. The Secretary reported upon the various matters coming under his jurisdiction and presented the names of some sixty new applicants for membership. These, on motion, were referred to The Council for final handling. The Secretary also announced the resignation of Treasurer Fordyce and requested that his own resignation be accepted. After discussion a motion was offered and adopted accepting both resignations and thanking the retiring officers for the services they had rendered. Dr. Jones, Editor of The Wilson Bulletin, was called upon for a word in connection with the official organ. He called attention to the fact that for the past year The Bulletin was averaging 64 pages per number, illustrated, and that in spite of the raise in dues during the current year the continued high cost of printing would probably consume the full income from memberships and subscriptions. He made a plea for more short field notes and reviews of current publications which bear on the inland area. A motion, according Dr. Jones the thanks and appreciation of The Club for his services during the current year, was offered and adopted.

The matter of getting the official organ to more bird students in the middle west, including Boy Scout Masters, was brought up by Mr. P. B. Coffin. Mr. Stoddard suggested that a special effort should be made to get The Bulletin to all bird banders not now members. The chair appointed Messrs. Coffin, Test, Boyd, and Eifrig, a committee to consumate the suggestions.

Dr. Swenk, Secretary of the Nebraska Ornithologists Union, reported that the revised articles of affiliation between that organization and the Wilson Club had been duly signed and the matter concluded. Secretary Gainer reported that The Tennessee Ornithological Society wished to take steps to effect a similar affiliation. On motion, The Council was instructed to take up the matter with power to act.

Dr. T. C. Stephens inaugurated a discussion as to plans for holding future meetings, in which the idea was advanced that The Club should distribute its meetings throughout its territory so as to build up interest in the various sections. Following favorable comment the matter was referred to The Council for study and designation of the next meeting place.

The committee on nominations was called on to report and as a result the following officers were elected for the year 1923:

President, Thos L. Hankinson, State Normal College, Ypsilanti,, Mich.
Vice-president, Dayton Stoner, 603 Summit St., Iowa City, Iowa.
Treasurer, Wm. I. Lyon, 124 Washington St., Waukegan, Ill.
Secretary, Gordon Wilson, 1434 Chestnut St., Bowling Green, Ky.

A vote of thanks was extended Mr. P. B. Coffin for the arrangements he had made for the dinner and place of meeting at The City Club.

All business having been disposed of, the meeting adjourned sine die.

The Chicago meeting of The American Ornithologists Union was the first to be held inland by this national organization and The Wilson Club, The Field Museum, The Illinois Audubon Society, and The Chicago Ornithological Club were given the pleasure of being joint hosts to that organization. The active work of the smaller organizations during previous years was, in part at least, responsible for paving the way to a record-breaking attendance at the sessions of the A. O. U. The lecture hall of the magnificient new Field Museum of Natural History was used for the public sessions. The Museum itself with its rich collections was a source of great interest to all visitors. Dr. Osgood, Curator of the Department of Zoölogy and Chairman of the local committee, had also provided a splendid exhibition of photographs and paintings of bird-life. The three-day program was replete with interest and included some splendid photographic work both in still and motion picture. Bird-banding activities consumed the time of one morning session while the reading of the more technical papers was segregated to a separate meeting room in order that papers of more general interest could be gotten through with in the time available. Detailed discussion of the program and the subsequent trips afield are deferred to the Secretary of the A. O. U., and will doubtless be found in the next number of The Auk.

A feature of the Chicago meeting was the organization of The Inland Bird-banding Association, the object of which will be to further this work and enlist new interest in banding in the interior section of North America. In another column, Mr. Wm. I. Lyon, who was elected Secretary of the new organization, will have more to say of its hopes and purposes for the future.

As a whole, the Chicago gathering of bird students was a great success and with its representation from the east, south, mid-west, Pacific coast and Canada, is well deserves to go on record as the most representative and democratic meeting of ornithologists yet held in this country.

ALBERT F. GANIER,
Secretary.

THE WILSON BULLETIN

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